CPC COOPERATIVE PATENT CLASSIFICATION

F03C POSITIVE-DISPLACEMENT ENGINES DRIVEN BY LIQUIDS (positive-displacement engines for liquids and elastic fluids F01 ; positive- displacement machines for liquids F04 ; fluid-pressure actuators F15B ; fluid gearing F16H)

NOTE

Attention is drawn to the notes preceding class F01 , especially as regards the meanings of "positive displacement", "rotary-piston machines", "oscillating-piston machines", "rotary-piston", "co-operating members", "movement of co-operating members", "teeth or tooth-equivalents", and "internal axis".

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

F03C 1/253 covered by F03C
F03C 1/28 " " F03C 1/0406, F03C 1/0605
F03C 1/30 " " F03C 1/0409, F03C 1/0631, F03C 1/0668
F03C 1/32 " " F03C 1/0415, F03C 1/0626, F03C 1/0652
F03C 1/34 " " F03C 1/0435, F03C 1/0615, F03C 1/0655
F03C 1/36 " " F03C 1/0435, F03C 1/0615, F03C 1/0655
F03C 1/38 " " F03C 1/0435, F03C 1/0615, F03C 1/0655
F03C 1/40 " " F03C 1/04N, F03C 1/06K

Guide heading:

F03C 1/00 Reciprocating-piston liquid engines

F03C 1/001 . {the movement in two directions being obtained by two or more double-acting piston liquid motors }

F03C 1/002 . {details; components parts }

F03C 1/003 . {controlling }

F03C 1/004 . . {speed-control }

F03C 1/005 . . {motor piston stroke control }

F03C 1/007 . with single cylinder, double-acting piston

F03C 1/0073 . . {one side of the double-acting piston being always under the influence of the liquid under pressure }

F03C 1/0076 . . . {the liquid under pressure being continuously delivered to one cylinder chamber through a valve in the piston for actuating the return stroke }

F03C 1/013 . with single cylinder, single-acting piston

F03C 1/0135 . . {with actuation of the return stroke by gravity }

F03C 1/02 . with multiple-cylinders, characterised by the number or arrangement of cylinders (with movable cylinders F03C 1/22; of flexible-wall type F03C 5/02)

F03C 1/03 .. with movement in two directions being obtained by two single-acting piston liquid engines, each acting in one direction

F03C 1/035 ... {one single-acting piston being always under the influence of the liquid under pressure }

F03C 1/04 .. with cylinders in star or fan arrangement {F03C 1/22 takes precedence }

F03C 1/0403 ... {Details, component parts specially adapted of such engines }

F03C 1/0406 .... {Pistons }

F03C 1/0409 .... {Cams }

F03C 1/0412 ..... {consisting of several cylindrical elements e.g. rollers }

F03C 1/0415 .... {Cylinders }

F03C 1/0419 .... {Arrangements for pressing or connecting the pistons against the actuated cam }

F03C 1/0422 ..... {hydraulically }

F03C 1/0425 .... {Disconnecting the pistons from the actuated cam (in general F01B 31/24) }

F03C 1/0428 .... {Supporting and guiding means for the pistons }

F03C 1/0431 .... {Draining of the engine housing; arrangements dealing with leakage fluid }

F03C 1/0435 .... {Particularities relating to the distribution members (F03C 1/0472, F03C 1/0531, and F03C 1/0538 take precedence) }

F03C 1/0438 ..... {to cylindrical distribution members }

F03C 1/0441 ..... {to conical distribution members }

F03C 1/0444 ..... {to plate-like distribution members }

F03C 1/0447 ... {Controlling }

F03C 1/045 .... {by using a valve in a system with several pump or motor chambers, wherein the flow path through the chambers can be changed, e.g. series-parallel }

F03C 1/0454 .... {by changing the effective cross sectional piston working surface }

F03C 1/0457 .... {by changing the effective piston stroke }

F03C 1/046 ..... {by changing the excentricity of one element relative to another element }

F03C 1/0463 .... {by changing the phase relationship between two actuated cams }

F03C 1/0466 .... {by changing the phase relationship between the actuated cam and the distributing means }

F03C 1/047 ... the pistons co-operating with an actuated element at the outer ends of the cylinders

F03C 1/0472 .... {with cam-actuated distribution members }

F03C 1/0474 .... {with two or more radial piston/cylinder units in series }

F03C 1/0476 ..... {directly located side by side }

F03C 1/0478 ..... {having several cylinder barrels coupled together }

F03C 1/053 ... the pistons co-operating with an actuated element at the inner ends of the cylinders

F03C 1/0531 .... {with cam-actuated distribution members }

F03C 1/0533 ..... {each piston being provided with channels coacting with the cylinder and being used as a distribution member for another cylinder }

F03C 1/0535 .... {with two or more radial piston/cylinder units in series }

F03C 1/0536 ..... {directly located side by side }
F03C 1/0538 .... {the piston-driven cams being provided with inlets or outlets }
F03C 1/06 .. with cylinder axes generally coaxial with, or parallel or inclined to, main shaft axis
F03C 1/0602 ... {Component parts, details }
F03C 1/0605 .... {Adaptations of pistons (pump pistons F04B 1/124, F04B 53/14) }
F03C 1/0607 .... {Driven means }
F03C 1/061 ... {having stationary cylinders }
F03C 1/0613 .... {having two or more sets of cylinders or pistons }
F03C 1/0615 .... {distributing members }
F03C 1/0618 ..... {cylindrical distribution members }
F03C 1/0621 ..... {conical distribution members }
F03C 1/0623 .... {Details, component parts }
F03C 1/0626 ..... {Cylinders }
F03C 1/0628 ..... {Casings, housings }
F03C 1/0631 ..... {Wobbler or actuated element }
F03C 1/0634 ..... {Actuated element bearing means or driven axis bearing means }
F03C 1/0636 ... {having rotary cylinder block }
F03C 1/0639 .... {having two or more sets of cylinders or pistons }
F03C 1/0642 ..... {inclined on main shaft axis }
F03C 1/0644 .... {Component parts }
F03C 1/0647 ..... {Particularities in the contacting area between cylinder barrel and valve plate }
F03C 1/0649 ..... {Bearing means }
F03C 1/0652 ..... {Cylinders }
F03C 1/0655 ..... {Valve means }
F03C 1/0657 ..... {Cylindrical valve means }
F03C 1/066 ..... {Conical valve means }
F03C 1/0663 ..... {Casings, housings }
F03C 1/0665 ..... {Cylinder barrel bearing means }
F03C 1/0668 ..... {Swash or actuated plate }
F03C 1/0671 ..... {Swash or actuated plate bearing means or driven axis bearing means }
F03C 1/0673 .... {Connection between rotating cylinder and rotating inclined swash plate }
F03C 1/0676 .... {Arrangement for pressing the cylinder barrel against the valve plate }
F03C 1/0678 ... {Control }
F03C 1/0681 .... {using a valve in a system with several motor chambers, wherein the flow path through the chambers can be changed }
F03C 1/0684 .... {using a by-pass valve }
F03C 1/0686 .... {by changing the inclination of the swash plate }
F03C 1/0689 ..... {using wedges }
F03C 1/0692 .... {by changing the phase relationship between the actuated element and the distribution means, e.g. turning the valve plate; turning the swash plate }
F03C 1/0694 .... {by changing the inclination of the axis of the cylinder barrel in relation to the

axis of the actuated element }

F03C 1/0697 .... {responsive to the speed }

F03C 1/08 . Distributing valve-gear peculiar thereto (for engines with positive-displacement in general F01L) ; {F03C 1/06 takes precedence }

F03C 1/10 .. actuated by piston or piston-rod

F03C 1/12 ... mechanically (F03C 1/18 takes precedence)

F03C 1/14 .. by driving liquid of engine (F03C 1/18 takes precedence)

F03C 1/16 .. Speed controlling, equalising or cushioning

F03C 1/20 .. specially adapted for engines generating vibration only

F03C 1/22 . with movable cylinders {or cylinder }

F03C 1/223 .. {having cylinders in star or fan arrangement, the connection of the pistons with an actuated element being at the inner ends of the cylinders }

F03C 1/226 ... {with cam actuated distribution members }

F03C 1/24 .. in which the liquid exclusively displaces one or more pistons reciprocating in rotary cylinders { (F03C 1/0636 takes precedence) }

F03C 1/2407 ... {having cylinders in star or fan arrangement, the connection of the pistons with an actuated element being at the outer ends of the cylinders }

F03C 1/2415 .... {cylinder block and actuated cam both rotating (F03C 1/2431 and F03C 1/2446 take precedence) }

F03C 1/2423 .... {with two or more series radial piston-cylinder units }

F03C 1/2431 ..... {cylinder block and actuated cam both rotating (F03C 1/2446 takes precedence) }

F03C 1/2438 ..... {directly located side by side }

F03C 1/2446 ..... {cylinder block and actuated cam both rotating }

F03C 1/2454 ... {having cylinders in star or fan arrangement, the connection of the pistons with an actuated element being at the inner ends of the cylinders }

F03C 1/2462 ... {the rotary cylinder being provided with only one piston reci- procating within this cylinder }

F03C 1/247 ... with cylinders in star- or fan-arrangement, {the connection of the pistons with an actuated element being at the outer ends of the cylinders }

F03C 1/26 . adapted for special use or combined with apparatus driven thereby (aspects predominantly concerning the driven apparatus see the relevant classes for such apparatus)

F03C 2/00 **Rotary-piston engines** (in which the liquid exclusively displaces one or more piston reciprocating in rotary cylinders F03C 1/24)

NOTE

Group F03C 2/30 takes precedence over groups F03C 2/02 to F03C 2/24.

F03C 2/02 . of arcuate-engagement type, i.e. with circular translatory movement of co-operating members, each member having the same number of teeth or tooth-equivalents

F03C 2/08 . of intermeshing-engagement type, i.e. with engagement of co- operating members

similar to that of toothed gearing

F03C 2/22 . of internal-axis type with equidirectional movement of co-operating members at the points of engagement, or with one of the co-operating members being stationary, the inner member having more teeth or tooth- equivalents than the outer member

F03C 2/24 . of counter-engagement type, i.e. the movement of co-operating members at the points of engagement being in opposite directions

F03C 2/30 . having the characteristics covered by two or more of groups F03C 2/02, F03C 2/08, F03C 2/22, F03C 2/24 or having the characteristics covered by one of these groups together with some other type of movement between co-operating members

F03C 2/302 . . {having both the movements defined in sub-groups F03C 2/02 and relative reciprocation between members }

F03C 2/304 . . {having both the movements defined in sub-group F03C 2/08 or F03C 2/22 and relative reciprocation between members }

F03C 2/306 . . {having both the movements defined in sub-groups F03C 2/22 and F03C 2/24 }

F03C 2/308 . . {having the movement defined in F03C 2/08 and having a hinged member }

F03C 4/00 Oscillating-piston engines

F03C 7/00 Engines of flexible-wall type

F03C 99/00 Subject matter not provided for in other groups of this subclass

F03C 99/005 . { Free-piston type engines }